

## ABSTRACT OF THE DISCLOSURE

In general a protective sheath for an ultrasonic fragmenting device includes a handpiece to be held and manipulated by a surgeon. The handpiece has a housing, an ultrasonic motor mounted therewithin, and an ultrasonic horn connected to the ultrasonic motor. An elongate ultrasonic probe is attached to the ultrasonic horn. The elongate ultrasonic probe has an outer surface about and along its length and has one or more vibratory nodes spaced along the length of the ultrasonic probe as a function of the resonant wavelength. The ultrasonic fragmenting device includes the protective sheath with a hollow sleeve with a proximal end and a distal end and which surrounds the elongate ultrasonic probe and extends therealong. The hollow sleeve has an inner surface formed, shaped, and sized to prevent contact with the outer surface of the elongate ultrasonic probe so that there is generally a clearance between the inner surface and the outer surface. The hollow sleeve has a connection on the proximal end to connect the hollow sleeve to the housing and a termination on the distal end located at or near the most distal vibratory node of the elongate ultrasonic probe. The termination has an inside diameter that is generally and substantially the same as the outside diameter of the elongate ultrasonic probe thereabout, and thus forms generally a barrier to the passage of material into the clearance.

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